NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

STRIPCROPPING

(Ac.)

CODE 585

DEFINITION

Growing row crops, forages, small grains, or fallow in a systematic arrangement of equal width strips across a field.

PURPOSE

- Reduce soil erosion from water and transport of sediment and other water borne contaminants[1]
- Reduce soil erosion from wind
- Protect growing crops from damage by wind-borne soil particles

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on cropland or other land where crops are grown and wind erosion is concern. [1]If the water erosion control purpose is needed contact the NM NRCS State Agronomist.

CRITERIA

General Criteria Applicable To All Purposes

Number of Strips. A stripcropping system shall consist of two or more strips.

Alignment of Tillage and Planting Operations. All tillage and planting operations will follow the strip line established.

Vegetative Cover. Vegetation in a stripcropping arrangement consists of crops and/or forages grown in a planned rotation.

No two adjacent strips shall be in an erosion-susceptible condition at the same time during the year. However, two adjacent strips may be in erosion-resistant cover at the same time.

Erosion-resistant strips shall be crops or crop residues that provide the needed protective cover during those periods when erosion is expected to occur.

Acceptable protective cover includes a growing crop, including grasses, legumes, or grass-legume mixtures, standing stubble, residue with enough surface cover to provide protection, or surface roughness sufficient to provide protection.

When the erosion-resistant strip is in permanent vegetation, the species established shall either be tolerant to herbicides used on the cropped strips or protected from damage by herbicides used on the cropped strips.

Alternative practices that may be used to separate erosion-susceptible strips include*: herbaceous wind barriers* or *windbreaks/shelterbelts*.

Layout Design. Strip widths shall be adjusted, within the limits of the Wind Erosion Equation, to accommodate widths of farm equipment to minimize partial or incomplete passes.

Design and install the strip layout to best facilitate operation of machinery used on the strips. To avoid point rows and partial machine passes, lay out strip widths to have some multiple of full width passes of seeding implements or sprayers.

The *conservation crop rotation* on stripcropped fields shall be consistent with the farm enterprise crop mix and/or associated livestock operation. These will influence the proportion of row crops, close growing crops, and meadow crops.

To avoid wide fluctuations in acreage of different crops from year to year, fields having identical crop rotations shall be set up that are nearly equal in size and have offset years of

rotation commencement. The number of fields needed to produce a nearly constant acreage of each crop for each year in the rotation is equal to one half of the years in the rotation. Even-year rotation lengths are preferable to odd-year rotation lengths for ease of design.

Width of Strips. The required width of strips shall be determined using currently approved erosion prediction technologies to achieve the planned erosion reduction. Wind erosion is determined using the Wind Erosion Equation (WEQ) management period method. The Wind Erosion Prediction System (WEPS) will be used when released fall of 2004.

Additional Criteria to Reduce Soil Erosion from Wind

Alignment of Strips. Strip boundaries shall run parallel to each other.

Orientation and Width of Strips. Strips shall be oriented as close to perpendicular to the prevailing wind erosion direction as practical and shall be between a North-South direction and a Northwest-Southeast direction.

The width of strips shall be determined using the currently approved wind erosion prediction technology. NM Agronomy Technical Note 55 (AGRON 55) explains the uses of the Wind Erosion Equation, Excel Spreadsheet Calculation. The evaluation shall account for the effects of other practices in the conservation management system.

The effective width of strips shall be measured along the prevailing wind erosion direction for those periods when wind erosion is expected to occur and for which the system is designed.

When the orientation of erosion-susceptible strips deviates from perpendicular to the prevailing wind erosion direction, the width of these strips shall be correspondingly reduced as per direction given in Wind Erosion section of the National Agronomy Manual.

Additional Criteria to Protect Growing Crops from Damage by Wind-borne Soil Particles

Alignment of Strips. Strip boundaries shall run parallel to each other.

Orientation and Width of Strips. Strips shall be oriented as close to perpendicular to the prevailing wind erosion direction as practical and shall be between a North-South direction and a Northwest-Southeast direction.

The effective width shall be measured along the prevailing wind erosion direction during those periods when sensitive crops are susceptible to damage by wind-borne soil particles.

The width of strips shall not exceed the width permitted by the crop tolerance to wind erosion during specific crop stage periods, as specified in the National Agronomy Manual, other accepted technical references, or other planned crop protection objectives.

CONSIDERATIONS

Design Considerations for Planning

Off-site transport of sediment and sediment-borne contaminants is reduced by this practice.

Stripcropping may need to be used in combination with other conservation practices to meet the goals of the resource management system.

PLANS AND SPECIFICATIONS

Specifications for installation and maintenance of Stripcropping shall be prepared for each field or treatment unit according to the Criteria described in this standard.

The purpose and definition shall be printed in the narrative statement in the conservation plan, and detailed specifications shall be recorded on the NM Stripcropping 585 jobsheet.

OPERATION AND MAINTENANCE

Wind sediment accumulations along strip edges shall be smoothed or removed and distributed over the field as necessary to maintain practice effectiveness.

Maintain turn row areas with at least 65% ground cover of grass or residue. Repair any blow out areas by reseeding to grass and

mulching with grain straw at a one ton/ac rate. Maintain enough width to allow turning of farm implements at the end of a tilled strip to double back on the same strip.

Operation and Maintenance Specific to Erosion by Wind

Erosion-resistant strips in rotation shall be managed to maintain the planned vegetative cover and surface roughness March through June. The protective cover must be adequate to inhibit the initiation of wind erosion and the surface roughness will be sufficient to trap saltating soil particles originating upwind. The WEQ will be used to establish the protected condition, residue and roughness. The protected condition will be described on the Jobsheet given to the producer.

REFERENCES

Chepil, W.S. and Woodruff, N.P., 1963. The Physics of Wind Erosion and its Control. Adv. Agron., 15: 211-302.

Woodruff, N.P., Lyles, L., Siddoway, F.H. and Fryrear, D.W., 1972. How to Control Wind Erosion. U.S.D.A., A.R.S. Agric. Inf. Bull. No. 354